MYRMECIA

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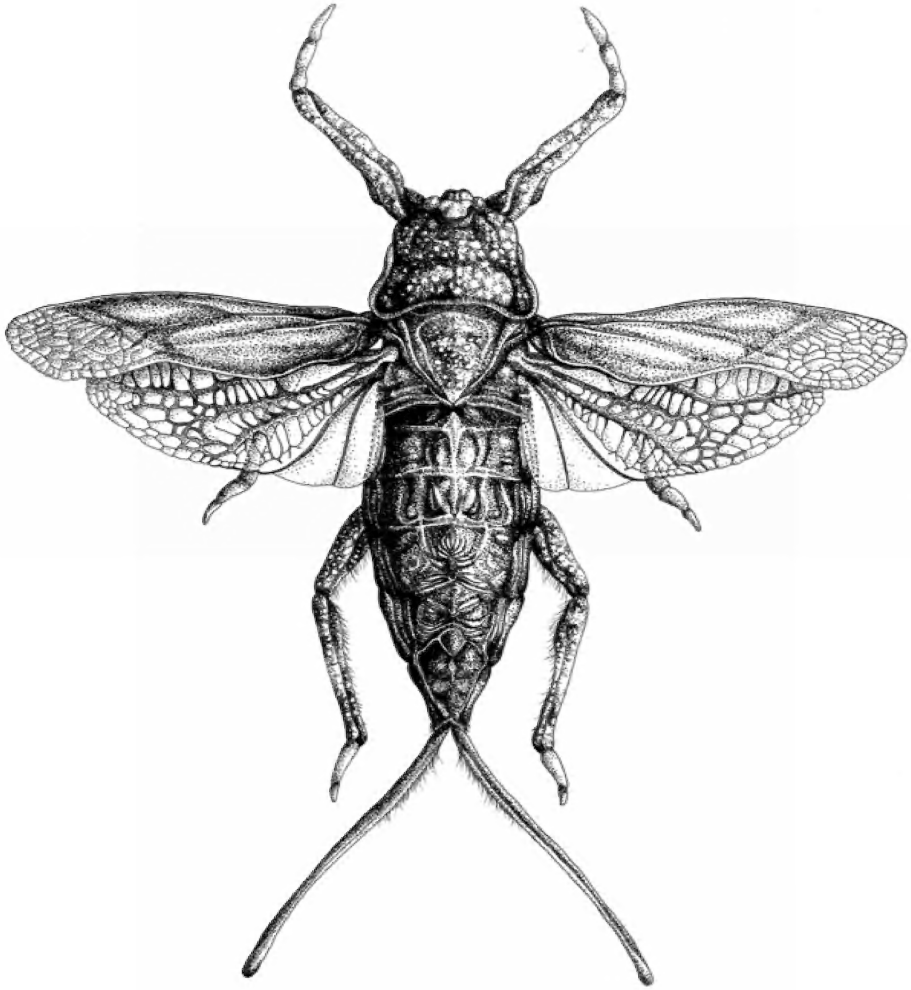

February 2010

MYRMECIA

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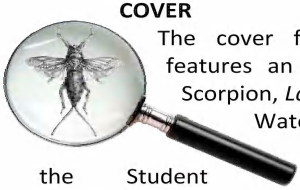
NOTICE

Statements made in *Myrmecia* do not necessarily represent the views of the Australian Entomological Society.

COVER



The cover for this year's *Myrmecia* features an illustration of the Water Scorpion, *Laccotrephes tristis*, by Nadia Waters. Nadia's drawing was awarded second prize in the Student Section of the 2009 AES Illustration Competition.

PRESIDENT'S REPORT

Ah the first epistle for the year! It is customary at this time to greet everyone with some salutation pertaining to the nature of the year that is before us.

This is borne either out of some inordinate sense of optimism, or in the vain hope that the current year will have to be in some sense "better" than the one just past. In my experience most days are, on average, the same as the ones that went before, and by extension one year is on average much the same as the previous (alas except for one inescapable fact - the body clock ticks over and certain inevitable changes set in). There are of course fluctuations from this norm.

On the up side, I attended the annual meeting of the Entomological Society of America in Indianapolis. I have dwelt on this large meeting previously. What I could not credit was that something like five talks that I wanted to attend were concurrent – go figure. The ESA has formally established an "International Branch". This recognises the growing number of members that do not fit into the current regional branch structure, which formed the backbone of what was once an essentially American based society.

I threw my hat into the ring and was elected as the International Branch representative to the ESA Governing Board (do not ask). I look forward to representing these members (and there are a fair few Australians) on the Board. Whilst at the meeting, I followed up on how the ESA runs its professional accreditation of entomologists. This is something our society is interested in pursuing and I am sure the current executive would welcome your input and views.

On the down side, we mark the passing of two stalwarts of Australian science that contributed greatly to entomology, ecology and the study of evolution. I refer to Ross Crozier and Charles Birch. Their ideas will live on in their papers, students and colleagues they have influenced. Ross was at the meeting in Darwin and contributed greatly to the success of that meeting. I often erroneously make the assumption that if I know something then everyone else does as well. Whilst at the Indianapolis meeting I wrongly assumed my American colleagues were in fact aware of his passing. What can I say? Charles of course is the other half of 'Andrewartha and Birch' fame. This book is often cited but I do wonder how many people have actually read the book? Personally I prefer the 1954 original, but then 1954 was a great year (no prizes for guessing why).

Very much on the up side I had the privilege to attend the inaugural 'Applied Evolution Summit' that was held on Heron Island from 3-8 January. Let's be honest here. It was a great venue to hold such a get together: birds nesting in the Pisonia trees, turtles coming ashore to lay eggs, and the wonders of the nearby reef – a place pullulating with life. Needless to say it was redubbed "Evolution Island". CSIRO, NSF, UC Davis and my University (UQ) sponsored the meeting. It brought together an eclectic mixture of researchers, practitioners and policy advisors in three broad fields: Medicine, Food and Environment. Apart from the interesting mix of fields we had luminaries in these fields from Oceania and North America (predominately) as well as Europe. A meeting such as this was as much a getting to know you, which will always include a modicum of chest thumping, but there was cross fertilisation and obvious commonalities across fields. Most biologists pay lip service to "The Theory" but then proceed as if it does not occur. Anyone dealing with resistance problems in the fields of human health and agriculture know better, and there is a growing body of evidence of rapid changes in species character traits under various conditions.

Entomologists and folk that work with insects are quietly at the forefront: John Oakeshott, Ary Hoffmann, Gary Fitt, Andy Sheppard, Scott O'Neill, Scott Carroll to name (drop) a few. The group discussions highlighted areas where we have not progressed much beyond Evolution 101 and a restatement of "The Theory". Two areas stand out as deserving more attention, namely the limits to adaptation and preconditions for adaptation to occur. Predicting how various living systems will change as environments change is the great challenge of our time. That evolution (with apologies to strict creationists), will be an important component to our ability to adapt culturally to global change that we have in part wrought as inescapable. From resistance in diseases to antibiotics, and resistance of insects and weeds to poisons, to conservation of biodiversity, from building landscapes for sustainable agriculture to medical practices cognisant of our evolutionary past, to species range models that include changes in character traits under selection, all would benefit from further development of the theory and targeted empirical studies. Hopefully this was the first of many more such meetings.

Not only do such meetings stimulate the brain but they are also useful, if we can go beyond preaching to the converted. As Hugh Possingham cogently pointed out, we need to reach the policy makers and managers! And hey Heron Island was a great place to visit.

May I wish you an above average year - mine has been great so far!

Myron ZALUCKI
President

VICE PRESIDENT'S REPORT

I write this report on return to work after Christmas holidays. Among other things, I learnt that the great icon of Australian transport infrastructure, the Pacific Highway, is not in much better

condition than in December 2008.

The Society has relied on the volunteer efforts of Murray Fletcher and NSW Primary Industries to develop, maintain and serve the Society web site. The Executive has just moved the Society web site to a new server maintained by the Taxonomic Research and Information Network (TRIN, www.taxonomy.org.au) and has commissioned a new site. Please have a look at the new site redesign at www.austentsoc.org.au and send me your comments. The site content will continue to develop, and we are planning that entomologists will be able to join or pay their subscriptions there as well soon. Notice too that we now have a Facebook page for the Society, thanks to Mark Schutze, Brian Lessard and Leigh Nelson for helping make that happen.

As our communication becomes more and more electronic, please ensure that the Society has the correct email address for you by (1) amending your subscription form, or (2) emailing our memberships secretary Stephen Cameron on stephen.cameron@csiro.au. If you haven't received your subscription notice yet, email our Treasurer on ghs.hooper@netspeed.com.au.

Best wishes to all members for 2010.

David YEATES
Vice President

OBITUARY

"Binatang" Bob Prior

"Binatang" Bob Prior passed away on the 16th November 2009 in Kimbe General Hospital. As many of you know, Bob was not only a great 'character' but he also provided a great service to the agricultural industry in PNG.

Bob contributed to entomology in cocoa, coconuts and oil palm. Some of his main contributions were to develop IPM strategies for serious pests in oil palm (Sexava) and research into Finschhafen coconut disorder. He contributed significantly to PNG entomology as a science and also helped mentor some of the current eminent entomologists.

Bob came to PNG in the 1980s and spend his first number of years in Popondetta, in Oil Palm entomological activities. He then transferred to Kimbe OPRA where he was instrumental in the introduction of the Oil Palm pollinating insect from Africa. This action alone increased pollination rates by up to 80% hence the production of oil Palm fruits many times, in PNG. He was also instrumental in the work on sexava grasshopper, a major pest of both coconut and oil Palm. He also provided protocols on the control of Finschhafen disease of coconut.

From OPRA, Bob transferred to Rabaul to CCRI. While in CCRI, he set up the entomology section and contributed to the identification of pheromones and attractants of scapanes beetles and the black Palm weevil. One of the CCI entomology staff members, Sebestian Embupa, was with Bob from the time he arrived in PNG. They were in Popondetta together, in OPRA together, and came to CCRI together.

After 10 years with CCRI, Bob retired to his oil palm block in West New Britain and not back to England. I (Samson) for one, who worked under him, knew him to be a practical field entomologist at heart.

Samson LAUP

NEW MEMBERS

Recruitment has been slow since the September meeting in Darwin. But, take note, the Executive is investigating a suite of new benefits for members. Armed with this 'carrot', we urge all regional councillors to seek out further likely recruits.

We welcome new full member Lara Senior, a DEEDI Entomologist at Gatton Research Station, Queensland. Lara's research involves projects aimed at reducing the impact of pest insects on horticultural crops. She comes from a background in the area of insecticide efficacy and ecotoxicology, and has a particular interest in the impact of generalist predators such as spiders on horticultural pests.

Alice WELLS
Honorary Secretary

AES SCHOLARSHIP REPORT

Sarah Mansfield

Parasitoids of *Thaumastocoris* spp. in Sydney

S. Mansfield*, D. Cross and A.E. Noack
*AES Scholarship Report 2009 awarded to S. Mansfield
Faculty of Agriculture, Food and Natural Resources, the University of Sydney
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A damaged* E. nicholii *leaf with* T. peregrinus *eggs, early instar nymphs and moults from 5th instar nymphs present (Photo: Dominic Cross)

INTRODUCTION

In 2001 *Thaumastocoris peregrinus* Carpintero and Dellapé (Hemiptera: Thaumastocoridae) attacked many of Sydney's eucalypts and it continues to have a devastating impact on many eucalypt species. The symptom of infestation is now so widespread it has the common name "winter bronzing" (Noack and Rose 2007). "As *T. peregrinus* became an increasingly familiar urban pest in Sydney, it expanded its range beyond Australia and became a serious pest internationally" (Noack 2009).

Thaumastocoris peregrinus has infested eucalypt plantations in South Africa, Zimbabwe, Argentina, Uruguay and Brazil causing considerable damage and economic loss (Jacobs and Neser 2005, Carpintero and Dellape 2006, Noack and Coviella 2006). Two more *Thaumastocoris* species are known to attack eucalypts in the Sydney basin (Noack 2009). The first, *T.* "spikey", is distinctive from *T. peregrinus* both morphologically and in its host range. It has been collected only on the Corymbia group of eucalypts. The second, *T.* "look-alike", resembles *T. peregrinus* both morphologically and in its host range (Noack 2009). To date few individuals of this second new species have been collected from two *Eucalyptus scoparia* trees growing in the Windsor- Penrith area of outer Sydney (pers com. Noack). More taxonomic work has to be done on the identity of these new species, especially the one which could be easily confused with *T. peregrinus*.

Two egg parasitoids (*Cleruchoides noackae* and *Stethynium* sp., Hymenoptera: Mymaridae)

have been recorded parasitizing *T. peregrinus* eggs under natural conditions (Lin *et al.* 2007). These parasitoids are considered potential agents for classical biological control of *T. peregrinus* in South America and South Africa. An important first step in the biological control effort will be to document the parasitoids of the three species of *Thaumastocoris* in Sydney. The primary aim of this project was to collect eggs from all three *Thaumastocoris* species in order to rear out and identify the associated parasitoids. Only a summary of the project is presented here – more information is available from the corresponding author.

METHODS

Six surveys at monthly intervals from April to September 2009 were conducted at four sites in the Sydney basin: Penrith, Sydney Olympic Park, Stanmore and Camperdown. Eggs from three species of *Thaumastocoris* (*T. peregrinus*, *T.* "look-alike" and *T.* "spikey") were collected using a pole pruner from host plants at each site (Table 1). About 200 leaves were collected from each site per survey and eggs were observed for emerging parasitoids. Adult and nymphal thaumastocorids were collected from each site and stored in 70% alcohol as voucher specimens. Emerged parasitoids were identified using Lin *et al.* (2007) with voucher specimens mounted on cavity slides and additional specimens preserved in 70% alcohol.

Table 1 - Summary of survey sites including thaumastocorid species present and host plant

Site	Species	Host
Penrith	*Thaumastocoris* sp. "look-alike"	*Eucalyptus scoparia*
Olympic Park	*Thaumastocoris peregrinus*	*Eucalyptus scoparia*
Stanmore	*Thaumastocoris peregrinus*	*Eucalyptus nicholii*
Camperdown	*Thaumastocoris* sp. "spikey"	*Corymbia citriodora*

Parasitism trials were also conducted to determine the exact relationship between the prominent parasitoid species, *Cleruchoides noackae* and *T. peregrinus*. Additional egg batches were collected from the Olympic Park site to obtain live parasitoids. Male-female pairs of parasitoids were confined in glass vials with a batch of *T. peregrinus* eggs from a laboratory culture for 24-48h (n = 15 pairs). Exposed eggs were kept in the laboratory for up to four weeks and any parasitoid emergence recorded.

RESULTS AND DISCUSSION

On average, thaumastocorid nymphs emerged five to ten days after collection while parasitoids, by comparison, took longer to emerge, usually two to three weeks after collection. Two species of parasitoids were recorded – *Cleruchoides noackae* from eggs of all three *Thaumastocoris* species and *Stethynium* sp. from eggs of *T. peregrinus* and *T.* "look-alike". On average, the percentage parasitism across all samples was 25% (with a range of 7-63%). A total of 2507 *C. noackae* were collected with a sex ratio of 56% female to 44% male (approximately 1:1). Twenty one *Stethynium* sp. were collected with a sex ratio of 9:1 female to male. For each species, females and males emerged concurrently.

Cleruchoides noackae *female (Photo: Dominic Cross)*

C. noackae accounted for 99% of all parasitoids observed in the study and was demonstrated to be a primary parasitoid from laboratory rearing (21% parasitism on average under laboratory conditions). This parasitoid is not species-specific within the genus *Thaumastocoris* and has also been recorded previously from the genus *Baclozygum* (Lin. *et al.* 2007). We were unable to collect enough *Stethynium* sp. to confirm this species is a primary parasitoid.

As a primary parasitoid, *C. noackae* has potential for use as a biological control agent of

T. peregrinus although the observed parasitism rates were relatively low. Further investigation is needed to determine its full host range in Australia and potential for non-target attack, to understand factors that affect its attack rate (e.g. lifespan, timing of egg maturation, host preferences and search behaviour) and to establish the level of parasitism needed to effectively suppress *T. peregrinus* populations.

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ENTOMOLOGY AROUND AUSTRALIA

NORTHERN TERRITORY

Charles Darwin University – School for Environmental Research

The focus on mosquito ecology and control of mosquito-borne disease in collaboration with Medical Entomology (NT Dept. of Health & Families) continues. **Susan Jacups** has commenced a PhD study titled "The evaluation of vector control efforts in northern Australia and the region for the prevention of vector-borne diseases". Susan will employ statistical modelling techniques to evaluate the effectiveness of present larval sampling, larval spray programs and the creation of drain incisions during the 1980s on the occurrence of mosquito-borne diseases across the Northern Territory. Using Queensland data, she will evaluate the effectiveness of lethal ovitraps for reducing the transmission of Dengue, and in Western Australia she will model climatic parameters in an attempt to identify early warning systems for Murray Valley encephalitis. Additionally, her work may be extended to the *Culicoides* midge-driven outbreaks of various diseases in livestock (cattle) across northern Australia.

Susan has published four papers this year on her PhD topic, including one as lead author, in the Journal of Vector Ecology, on the fine-scale distribution and habitat preferences of the larvae of the Saltmarsh Mosquito (*Aedes vigilax*) within a large wetland near Darwin.

Also using data provided by Medical Entomology, **Don Franklin** is continuing to investigate spatio-temporal patterns in the structure of mosquito communities around Darwin. Darwin is home to about 70 species of mosquito, only about 10 of which trouble humans. He and **Peter Whelan** authored a recent paper in PLoS ONE showing that mosquito assemblages fluctuate seasonally in a remarkably predictable manner. This occurs notwithstanding the relatively unpredictable nature of rainfall during the onset and cessation of the wet season, and occasional major irruptions of a few mosquito species.

CSIRO Sustainable Ecosystems – Tropical Ecosystems Research Centre

Ben Hoffmann received the John Philip Award for the Promotion of Excellence in Young Scientists at the CSIRO Awards held in Melbourne in October last year. The award was in recognition of a young scientist who has already shown evidence of bringing research achievements to fruition and demonstrated that this will lead to a significantly new investigative approach to problem solving in the field of research. Ben's research into the ecology and management of invasive ants, especially on Indigenous lands, has resulted in internationally significant management outcomes. Some of the world's worst ant pests have been eradicated from regions of outstanding ecological and cultural significance which include areas within Kakadu, Arnhem Land and the Tiwi Islands.

In November 2009, the Darwin ant biodiversity lab hosted two international scientists. **Inara Leal** from Universidade Federal de Pernambuco, Recife, in Brazil visited for two months. Leal's specialty is ant-plant interactions and her time at CSIRO was spent writing collaborative papers with **Alan Andersen**. **Xavier Arnan** from University of Barcelona returned for nearly three months, researching ant community dynamics at the Territory Wildlife Park Burning for Biodiversity plots. Xavier visited Darwin in June 2008 and is investigating the interactions between at least nine similarly sized, generalist *Monomorium* species within a 20 x 20 m area. These ants have been sent for genetic analyses to validate the number of species, and for isotopic analysis to investigate differences in diet.

Last December, CSIRO hosted the Tiwi Carbon Study Workshop for Tiwi Land Rangers and the Environmental Crew from Tiwi Plantations (formally Great Southern Plantations). CSIRO's **Alan Andersen**, **Anna Richards**, **Magen Pettit**, **Jon Schatz** and **Gus Wanganeen**, and Tiwi Land Council's **Kate Hadden** discussed carbon topics and invertebrate biodiversity on the Tiwi Islands. Participants also had the opportunity to engage in practical sessions involving preparing soils for carbon analysis, weighing litter to calculate carbon amounts in plants as well as sorting through samples to collect and identify termites and ants under the microscopes. The Tiwi Islands have a particularly noteworthy ant fauna, with at least 30 species known from nowhere else, and four genera not known elsewhere from the Northern Territory.

The ant lab has recently collaborated with CSIRO colleagues in Townsville, led by **Justin Perry**, in a study of the effects of fire on biodiversity in the Strathburn area of Cape York Peninsula. The study yielded 36 new ant species for the Darwin collection. These ants include the genera *Rhytidoponera*, *Bothroponera*, *Carebara*, *Crematogaster*, *Meranoplus*, *Monomorium*, *Pheidole*, *Tetramorium*, *Ochetellus*, *Papyrius*, *Camponotus*, *Melophorus* and *Paratrechina*.

Finally, the ant lab welcomes a new technician, **Jodie Fraser**, who will commence this month. Jodie worked as a Botanical Advisor for Rio Tinto in the Pilbara for two years and more recently has been a laboratory technician at the Northern Territory Environmental Laboratories and Casuarina Senior High School. She joins the Darwin ant lab after **Tony Hertog** retired in April 2009. Tony began his career with CSIRO 30 years ago, working primarily on floodplain ecology, including the impact of feral Asian water buffalo. In the late 1980s, he worked on fire ecology and management, involved in the world's largest fire experiment at Kapalga Research Station (which was later incorporated into Stage 2 of Kakadu National Park), where different fire regimes on large mammals and birds were investigated. Following on from Kapalga, Tony joined Alan's invertebrate biodiversity group, initially focussing on beetles before moving to ants. Although retired, Tony will return to the ant lab this year to pin all the ants he collected during his expeditions with wife Mary.

Department of Natural Resources, Environment, the Arts and Sport

Biodiversity Conservation Unit

Honours student **Dianne Bell** has reached the half way mark with her project investigating the environmental cues for emergence of Coleoptera in central Australia. Dianne is making good progress and finishes the fieldwork component in March. **Chris Palmer** is continuing with work investigating the effects

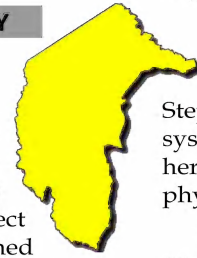
of buffel grass on invertebrate diversity in urban settings.

Museum and Art Gallery of the Northern Territory

In October 2009, **Michael Braby** attended **Tim New's** retirement farewell held by his former students at Pound Bend Warrandyte State Park (near Melbourne). This was followed by a visit to Alice Springs for two days to assess the small, local entomology collection held at the Central Australian Museum.

Chris PALMER
NT Regional Councillor

AUSTRALIAN CAPITAL TERRITORY



ANIC

The ANIC has received several large collections of insects over the last 12 months. **David Rentz** donated an enormous collection of over 15,000 specimens from approximately 14 insect Orders. All the specimens were obtained on or near his property in north Queensland, and many are identified to species. **Thomas Gush** donated approximately 500 beetle specimens, consisting mainly of Australian fauna, with a handful of Asian specimens as well. The majority of Australian specimens in this collection are still undescribed and are of important scientific value. Both collections will make a significant contribution to the ANIC, and we offer our sincere thanks to the donors. ANIC also received several large cabinets of biting midges collected by **Alan Dyce**, which are now being incorporated into the collection.

The Lepidoptera laboratory has been even more popular than usual with visitors recently. **Cathy Young** from the University of Tasmania visited to identify Geometridae and other moths from Western Australia; **John Dugdale** from Landcare Research, Nelson, called in to work with **Ted Edwards** on the placement and description of an unusual alpine species of Hepialidae that has flightless females. **Gerhard Tarmann** came to complete the curation of the Zygaenidae, including material from ANIC and other collections that had been used in his 2005 book, so that borrowed material can be returned. **Lauri Kaila** visited to sort out a few final problems in the Elachistidae for his forthcoming monograph, and to extract specimens of Hypertrophinae for a future revision of these attractive moths. **You Ning Su** has continued his work on curating the Arctiidae, and has been working on a new version of the imaging system Helicon Focus 5.0 for Windows. This system can automatically control a camera taking multiple images at different focal planes for later assembly into a single image. It is proving to be a fast and efficient way of producing images, and is already being used for photography of Lepidoptera and a range of other insects.

Stephen Cameron and **Ainsley Seago** went to the Entomological Society of America conference in Indianapolis, where Stephen spoke about his project on molecular systematics of termites, and Ainsley reported on her work on a molecular and morphological phylogeny of Coccinellidae.

Rolf Oberprieler has been looking at a newly-discovered and unidentified weevil that has been found at a number of localities in South Australia, attacking canola and other food plants. It has been provisionally identified as a species of *Trachyphloeus*, probably of African origin, and its presence in Australia may be the result of a recent accidental introduction. Rolf also took part in a workshop at the Centre for Plant Biodiversity Research in Canberra, exploring opportunities for collaborative work with botanists and other entomologists, including **Chris Reid**, **Gerry Cassis**, and **David Yeates**, on *Acacia* and its associated insects. Rolf has completed his large project on fossil weevils, in collaboration with **Willi Kuchel**, after two years of hard labour.

Tom Weir did another trip to the Australian Museum to sort and identify aquatic and semi-aquatic bugs, as part of his project to compile data on their Australia-wide geographic distributions. Tom has also been identifying specimens as part of a project with **Stephen Cameron** and **Nicole Gunter**, to collect DNA from every genus of Australian beetles. He also found time to return another large consignment of weevils from the Lea collection to the South Australian Museum, to work with **Nadine Guthrie** of the Department of Environment and Conservation (Western Australia) in preparing

Visitors to ANIC in December 2009. From top: Dan Papacek, Alberto D. Guanilo Alvarado, bottom: Laura Fagan, John Dugdale, Mette Nielsen. (Photo: Bruce Halliday)

identified reference collections of beetles from the Pilbara survey for ANIC and the Western Australian Museum, and to compile data on taxonomy, distribution, and possible conservation status of selected species of dung beetles for an IUCN survey of threatened and endangered species.

Paul Brock visited the ANIC in December to work on the Phasmid collection, taking photographs of specimens and sorting through the accession material. Paul was also able to spend some time collecting around Black Mountain during his time in Canberra, and despite the hot and dry conditions, was able to find an unexpected specimen of the stick insect *Tropidoderus childrenii*. The ANIC is also benefiting from the expertise of **Lindsay Popple**, who recently moved to Canberra to take up a Research Fellowship at the ANU. Lindsay is spending some of his free time working on cicadas in the collection, sorting and identifying specimens.

Other visitors included **Brett Melbourne**, **Ty Tuff** and **Jeff McClenahan** from the University of Colorado, who came to collect and identify beetles from Wog Wog, NSW. They will compare their results with data from the same collection localities that were used in a major study of habitat fragmentation at Wog Wog over 20 years ago. **Sacha Jellinek** of the University of Melbourne visited to identify beetles collected in his project on the effects of vegetation regeneration on ground beetles in the Wimmera Region of western Victoria. **Graham Brown** (NT Museum) visited the Hymenoptera laboratory to look at our Tiphidae collection, and **Michael Batley** of the Australian Museum also visited **Saul Cunningham** and the Hymenoptera collection, to check the identification of bees collected during a pollination survey. **Dan Papacek** and **Alberto Guanilo** of (Bugs for Bugs Munduburra, Queensland) visited **Laurence Mound** and **Bruce Halliday** for some help with identifying thrips and mites involved in their integrated pest management programs. Visitors also included a film crew from Channel 10, who are preparing a program about insect taxonomy and biodiversity for the science-based children's television series *Scope*, which is due to be broadcast early this year.

Michael Thompson reports that work on the Remote Microscope Network has been very exciting recently. Fully operational remote microscopes have now been installed in Tasmania, the Northern Territory, and throughout Victoria, meaning every state and territory in Australia is now covered. Michael has also been training staff in Thailand, Lao PDR and Vietnam in the use of remote microscopes, and hopes to do the same in East Timor in the near future. **Rolf Oberprieler** used

the network to run a very successful training course in the taxonomy of mango weevils, for AQIS staff in Darwin and Brisbane. The next major step in the project will be a portal and image database to be housed in PaDIL, to make remote microscopy widely available and easy to use for experts and non-specialists alike. **Anita Lyons** has also been very active in AQIS/CSIRO liaison, as well as providing support to the Remote Microscope Network. Anita took part in a workshop on bee diseases conducted by **Denis Anderson** in CSIRO Entomology, with contributions on molecular systematics from **Stephen Cameron**, and a quick course on parasitic mites from **Bruce Halliday**.

Leigh Nelson, **David Yeates**, and **Bryan Lessard** made an expedition to northern NSW collecting Fergusoninid flies from *Angophora*. The eventual objective is to produce a molecular phylogeny of the flies and relate it to the phylogeny of their plant hosts. They also collected Tabanidae to incorporate into Bryan's molecular and morphological revision of the genus *Scaptia*.

Matt Colloff with **Giselle Perdomo** (Australian Centre for Biodiversity, Monash University) completed their review of *Crotonia* from temperate rainforests in Victoria. These large, cumbersome, muck-covered, tree-climbing, moss-inhabiting oribatid mites are of considerable evolutionary and biogeographical interest, not least because they appear to have done the implausible and re-evolved sexual reproduction from within an entirely parthenogenetic clade. They are exclusively Gondwanan and appear to have undergone a series of radiations in rainforests along the east coast of Australia. Matt is working on *Crotonia* of Queensland, which turns out to be a diverse, highly localised fauna, with high species turnover between rainforest localities. The task has been made easier thanks to great curatorial assistance from **Owen Seeman** at the Queensland Museum and access to specimens from some of the magnificent bulk Berlesate material in that collection (thanks to **Geoff Monteith** and co workers). Matt is now turning his attention to other Australasian *Crotonia* hotspots, including New Caledonia, which is currently almost unnown, but holds considerable promise, and Lord Howe and Norfolk Islands, which have small but exclusive *Crotonia* faunas. If anyone knows of good bulk Berlesate material from biogeographically interesting localities that might yield specimens of these beasts, could they please contact Matt at Matt.Colloff@csiro.au. Many thanks.

The thrips room has been particularly busy during the past quarter. **Laura Fagan** and **Mette Nielsen**, from New Zealand Plant and Food Research, visited for three weeks and, with **Laurence Mound**, prepared an identification system to 134 species of New Zealand Thysanoptera, using Lucid software. Laurence and **Alice Wells** then joined **Tony Postle**, **Anthony Rice** and **Barbara Waterhouse** from NAQS on a quarantine survey for thrips on seven of the islands in the Torres Straits - slide mounting the catch will take rather longer than the five days of field work. **Bob Foottit** of Agriculture Canada spent four weeks in Australia as a McMaster Fellow, checking all of the major aphid collections, including two periods at ANIC. **Andrew Beattie** of Macquarie University again visited briefly in connection with his studies on why thrips packed tightly into an enclosed gall rarely suffer attack by fungal or bacterial pathogens. With help from **Dena Paris**, a revised account of Australian Panchaetothripinae was made available on the thrips website. The summer break proved most welcome, looking for thrips in the Adelaide Hills and on Kangaroo Island.

Bruce HALLIDAY

School of Physical, Environmental and Mathematical Sciences, UNSW@ ADFA, Canberra, and Institute of Applied Ecology, University of Canberra, Canberra

Alistair Drake travelled to South Korea in October to participate in a 4-day APEC-sponsored workshop on migratory insect pests of rice and the virus diseases they carry. The workshop was attended by one or more scientists from S. Korea, China, Japan, Taiwan, Vietnam, Cambodia, Indonesia, Malaysia and Thailand. Alistair gave a presentation on "Observing insect migration with radar in Australia and East Asia" and also presented the "country report" for Australia. The latter

incorporated information from several Australian entomologists whom Alistair had contacted over the preceding weeks. After two days of presentations in a Seoul conference facility (with about 50 agricultural extension officers from all round S. Korea also attending), the workshop transferred to the more rural community of Yangpyeong about 50 km to the east. Here there were visits to experimental rice plots, a rice packing facility, and a regional testing laboratory. The delegates then turned their attention to the development of a set of recommendations; as the only native-English speaker present, Alistair was called upon to draft the workshop's report and resolutions!

The meeting was called in response to a resurgence in rice pest and disease problems that started in 2005 and is affecting a region extending from the Mekong Delta at the southern tip of Vietnam through to Korea and Japan. The role of migration in the spread of the pests and vectors (principally planthoppers) is now well understood, but management and forecasting is hampered by a lack of information about populations in source regions, which frequently are in another country. The workshop's primary output was therefore a proposal for a network, covering E and SE Asia, for the exchange of data from monitoring traps, surveys, and viral assays. This concept is not new, but on this occasion S. Korea's Rural Development Administration has identified some seed funding, and internet-based data-sharing systems now available may allow a relatively low-cost and practicable implementation.

In November, Alistair and **Haikou Wang** (Australian Plague Locust Commission) went to Bourke (New South Wales) to re-install the Insect Monitoring Radar that was damaged by a mini-tornado at the end of 2008. The electronic equipment had suffered surprisingly little harm, although some waveguide that had been bent had to be replaced. The electronics are now housed in a new insulated cabin that is rather more firmly anchored to the ground than its predecessor!

Trudi WHARTON
ACT Regional Councillor

VICTORIA

IPM Technologies P/L

For the last few months, IPM Technologies has been involved in a range of projects in horticulture and broad-acre. **Peter Cole** and **Anna Cutler** have been conducting tests of pesticides against beneficial species and have been attempting to provide precise information that relates the specific results of both acute and sub-lethal effects of particular pesticides against particular species and life stages of beneficial species. They have been supported in this by **Kate Lorey** who has recently returned from maternity leave.

Jessica Page and **Paul Horne** are involved in a range of IPM projects including demonstrations of IPM in vegetable crops in Tasmania and arable crops in New Zealand, as well as developing IPM strategies in Victorian strawberry crops and control of slugs in processing crops. They have just commenced a project to attempt to identify IPM compatible control measures for potato psyllid (in New Zealand) before it arrives in Australia. Potato psyllid was first detected in an Auckland greenhouse tomato crop in April 2006. It is now an established pest in New Zealand

Neil Hives has been involved in developing

***Adult** Potato Psyllid,* **Bactericera cockerelli** *(Sulc). (Photo UC Riverside)*

IPM implementation in broad-acre crops in Victoria and has recently been attempting to survey the golden sun moth.

Everyone at IPM Technologies is involved in regular monitoring with farmers to provide advice on how to deal with pests within an IPM strategy.

Paul HORNE

QUEENSLAND

Far North

James Cook University, Townsville

For the past six years **Richard Rowe** and **Rhondda Jones** have been developing a database system to allow web access to information on Odonata. This is one leg of a tripod, the other legs being the Tree of Life Odonata site and an online 'key' to enable identification of any dragonfly. The dragonfiles system has been developed and populated to the point that a public beta is now available for testing at: http://medusa.jcu.edu.au/Dragonflies/

Richard and Rhondda invite use and comments. The system is also being contemplated for use on the Trichoptera and on cestodes.

The next highly successful AntCourse, organised by **Brian Fisher** (California Academy of Science) and **Simon Robson** (James Cook University) , will be held in Danum Valley Sabah, August 16 -26 2010. Sponsored by the Cal Acad Science and Museum of Comparative Zoology Harvard, it represents an excellent opportunity for a crash course in ant biology, and is perfectly timed to allow individuals participating in the IUSSI Meetings in Copenhagen to make their way to Borneo on their way home. Further information can be found at

http://research.calacademy.org/ent/courses/ant. Applications close April 1, 2010.

Simon Robson is the incoming President of the Australasian Evolution Society and will host the national meeting in Townsville in either July or August of 2011. There will be lots of room for insect studies so please consider a visit to the warm north during this time. Further details to follow.

Dept Employment, Economic Development and Innovation ((DEEDI), includes the former Dept. Primary Industries and Fisheries). The Queensland Department of Primary Industries and Fisheries has been absorbed into a new mega-department – Dept Employment Economic Development and Industry (DEEDI), the naming of primary industries functions is still being worked out.

DEEDI, South Johnstone

David Astridge travelled to the Philippines (Mindanao- Davao and Cagayan De Oro) in Nov-Dec 2009 as part of a recently started 4 year ACIAR project developing pest management systems in papaya. The focus of this project is on developing pesticide reduction strategies and IPM systems for two spotted mites and spiralling whiteflies in papaya. They have field collected a few different species of Tetranychus spider mites and predators (Stethorus and Phytoseiid mites) taken back to Australia for identification by **Jenny Beard** of the Qld Museum.

Queensland Museum

Insects take centre stage at Queensland Museum this year. **Chris Burwell** has just spent three days at our Townsville campus, Museum of Tropical Queensland to give public talks and help out with their "Creepies crawlies alive!" holiday activities.

In Brisbane we are eagerly anticipating the opening of "The Butterfly Man of Kuranda", the first time the majority of cases from the F.P. & A.P. Dodd collection have been displayed in over 15 years. The exhibition opens to the public on the 17th February and has been totally redesigned, with generous support from the Queensland Office of Gaming Regulation, matching funds raised by the Queensland Museum Foundation.

Frederick Parkhurst Dodd

The exhibition will consist of 26 cases of beautifully-arranged, tropical insects dating from 1917 through to the 1960s, along with two interpretative cases, an interactive for the kids and Dodd's own iconic net. It will continue for approximately six months at South Bank. There are also plans to feature it at two other Queensland Museum campuses; Cobb & Co. Museum, Toowoomba and Museum of Tropical Queensland, Townsville.

There are plans to produce a new edition of **Geoff Monteith's** award-winning book "The Butterfly Man of Kuranda – Frederick Parkhurst Dodd" along with a souvenir guide, "Amazing 3D Insects" and several other insect publications.

As a 21-year-old bank clerk, Frederick Parkhurst Dodd was reluctantly transferred from Victoria to Townsville in 1884. A fascination with tropical insects led him to quit the bank in 1895 to devote his life to their study. Settling later in Kuranda, he developed a spectacular show collection.

The Gold Shield, from the Dodd Collection showing at the Queensland Museum.

The whole family helped in the business and son Alan became a professional entomologist. He brought the Cactoblastis moth from South America to rid Australia of prickly pear. Towards the end of his career Alan produced beautifully-arranged cases of his New Guinea butterflies that complement the older collection.

In 1987 Dodd's daughters, Elizabeth and Katherine, donated the remaining 42 cases in near-perfect condition to the Queensland Museum. The collection toured all over Queensland and New Zealand before it was rested.

Reviewing the last few months, **Chris Lambkin** and **Geoff Monteith** were invited to join a group of scientists assembled from across Australia to complete the second Outback Blitz trial survey in Western Australia in September 2009.

The target reserves were Charles Darwin Reserve, Karara, Lochada and Kadji Kadji about 160 km ESE Geraldton. Chris and Geoff set up 16 Malaise and Flight Intercept traps, mushroom and dung baited pitfalls, hand collected, and sweep netted on all reserves. Over 142 samples were collected. **Kathy Ebert** was employed to sort the Malaise Trap samples for target groups. Chris was excited to find in the samples undescribed species of stiletto flies (Therevidae), bee flies (Bombyliidae), and Apioceridae. One lovely find was the rare *Neorhaphiomydas setosa* (Mydidae). Geoff was disappointed not to collect any dung beetles due to the cool conditions, but got an interesting collection of Carabids. **Federica Turco** and Geoff took the opportunity to look for dung beetles and bark beetles across southern WA before the Outback Blitz. Geoff was very successful, despite the rain.

In September 2009, **Chris Burwell** and **Chris Lambkin** attended and presented at "Darwin 200: Evolution and Biodiversity"

In November **Geoff Monteith** and **Federica Turco** spent two weeks collecting in North Queensland. Geoff has returned for two weeks in January this year.

QM was contracted to complete an Outback Blitz survey of Culgoa Floodplains National Park (NP) Qld, Culgoa NP NSW, and Ledknapper Nature Reserve NSW, north-east of Bourke. Chris and **Noel Starick** set off in November 2009 and set up 11 Malaise traps, pitfalls, hand collected, and sweep netted across the three reserves. They met and trained the Rangers on each park on how to take the monthly samples. In March another group will return to the reserves to hand collect and retrieve the samples for sorting. Extreme temperatures were encountered during the November survey. Catastrophic Fire Danger conditions delayed access to the NSW National Parks. Even the target bee flies sought all available water sources, enhancing their capture.

An Outblack Blitz find* – Neorhaphiomydas setosa *(Mydas fly)

Other consultancies have kept us busy and helped keep the wolf from the door. Surveying Capricorn Cays for Queensland National Parks has continued and **Aki Nakamura** has been busy analysing data and writing publications. Aki will then be working on the next round of the environmental impact survey at Redlands with a collecting trip scheduled for February.

Geoff MONTEITH

SE Queensland

Queensland University of Technology

Mark Schutze returned from a successful December '09 field trip, working with Thai Department of Agriculture entomologists to collect *Bactrocera* fruit flies from Bangkok to Surat Thani, Thailand (see photo previous page). The flies will be included in a CRC for National Plant Biosecurity funded project examining regional variation of selected pest species from the Oriental fruit fly species complex. Mark even managed some sightseeing (and eating) whilst waiting for the traps to do their work.

Mark Schutze (right) and the team of Thai DoA entomologists who accompanied him on the collecting trip, including his host Yuvarin Boontop 'Rak' (centre), taking a break on the spectacular Chiaw Lan Lake, Surat Thani Province, Thailand. [Observation readers will note that in the last Myrmecia Mark was junketing in Vienna, what sort of post-doc is this?!]

Two new PhDs will start in **Tony Clarke's** lab in February 2010, these being **Kumaran Nagalingham**, a Senior Research Fellow with the Central Institute for Cotton Research, Indian Council of Agricultural Research, and **Craig Marsden**, a recent QUT honours graduate. Kumaran will work on a project studying movement in Q-fly, while Craig will examine the link between ovipositor morphology and host use in *Bactrocera* fruit flies.

After a year of faculty reshuffling, the entomologists in the former School of Natural Resource Sciences now sit within the Discipline of Biogeoscience: go figure...

School of Biological Sciences (BIOL), The University of Queensland

Dave Merritt, students and offsiders have been sliding down steep and wet embankments in Springbrook looking for glow-worms. **Lisa Rigby** and **Robyn Willis**, who both studied glow-worms, graduated with first-class Honours in December and Lisa is continuing to work in Dave's lab. **Rebecca Morley** (Honours student) has been making some interesting findings about glow-worm vision that she hopes to write up later this year. Dave's end-of-year celebrations were enhanced by being awarded the academic staff appreciation award for BIOL for 2009.

Penny Mills (Cook lab) has started a PhD on speciation in the gall-inducing scale insect Apiomorpha. Penny, **Lindsay Popple**, **Mike Crisp** and **Lyn Cook** took a road trip to the Darwin AES conference and then continued on across the Kimberley and back through central Australia, only returning to Canberra and Brisbane in early November. The trip resulted in the finding of several undescribed species and plenty of specimens to keep students in both labs busy. Third year undergraduate students used some of the specimens for a summer project in December and found genetic evidence for a previously unrecognised species of gall-inducing scale insect. They will help write up a paper describing the "new" species.

Australians at SOVE, Antalya, Turkey, October 11-16, 2009. (Left to Right). Andrew van den Hurk, Cassie Jansen, Scott Ritchie, Peter Whelan, Richard Russell, Petrina H. Johnson, Sue Jacups, Cheryl Johansen and Steve Frances

Other travels have included **Myron Zalucki** visiting Indianapolis USA for the Entomological Society of America's annual conference, and **Mike Furlong** has been in Wales. **Michelle Rafter** (PhD candidate, Walter lab) has been in South Africa to study the mating system of the citrus thrips *Scirtothrips aurantii*. **Gimme Walter** and **Paul Ebert** have been in Cunnamulla Qld working on an outreach project with indigenous communities.

Visitors to BIOL recently have included **Renata Smallegange** from The Netherlands, who has been helping **Andrew Turley** (PhD candidate, McGraw lab) set up olfactometer equipment for investigating host-seeking behaviour by mosquitos. Other mosquito work is continuing apace, including **Peter Mee** (McGraw/O'Neill labs) graduating with first class Honours after completing his project on larval competition among Wolbachia-infected and uninfected mosquitoes.

New arrivals include **Faheem Ahmad**, a PhD candidate in **Gimme Walter's** lab, who will be investigating the ecology *Tribolium castaneum*. **Rukmowati Brotodjojo** has also arrived to do post doctoral work with **Mike Furlong** on *Diadegma*.

Just before the start of the Christmas break, staff from BIOL (**Selena Hobbs**, **Lina Daddow**, **Lois Eden**, **Lyn Beard** and **Louise Kuchel**) conducted outreach programs in local Brisbane primary schools, introducing students to stick insects and other biological subjects.

After a month long field survey AMI team members celebrate with Solomon Island colleagues at the Survey Closing Ceremony, Isabel Province 2009. Left to Right: Watson Hevalao, Charlie Iro'ofa, Marie-Louise Johnson, Hugo Bugoro and Bob Cooper.

Army Malaria Institute (AMI)

Bob Cooper spent all of October conducting a survey of *Anopheles* mosquitoes in Santa Isabel province, Solomon Islands. **Donna MacKenzie**, **Andrew Baron** and **Sarah Corcoran** ably assisted him. **Marie-Louise Johnson** re joined the University of Queensland in April 2009, as part of the Pacific Malaria Initiative Support Centre, School of Population Health. She is based at AMI where she supervises malaria surveys in the South Pacific as part of the Malaria Elimination Program. Marie-Louise is also collaborating with **Myron Zalucki** at UQ on publishing earlier insect behavioural studies.

Steve Frances attended the 5th International Congress of Vector Ecology at Belek-Antalya, Turkey. He co-moderated a session on military entomology with Stanton Cope, Director of the Armed Forces Pest Management Board, Washington, USA, and also presented a poster on recent studies concerning protection provided from mosquito biting by insecticide treated military fabrics. Steve was one of 11 Australian entomologists who attended the congress (See Photo).

In December, **Hugo Bugoro**, from SIMTRI, Solomon Islands, and **Tom Burkot**, from the Centers for Disease Control, Atlanta, USA, visited AMI to catch up with Bob Cooper.

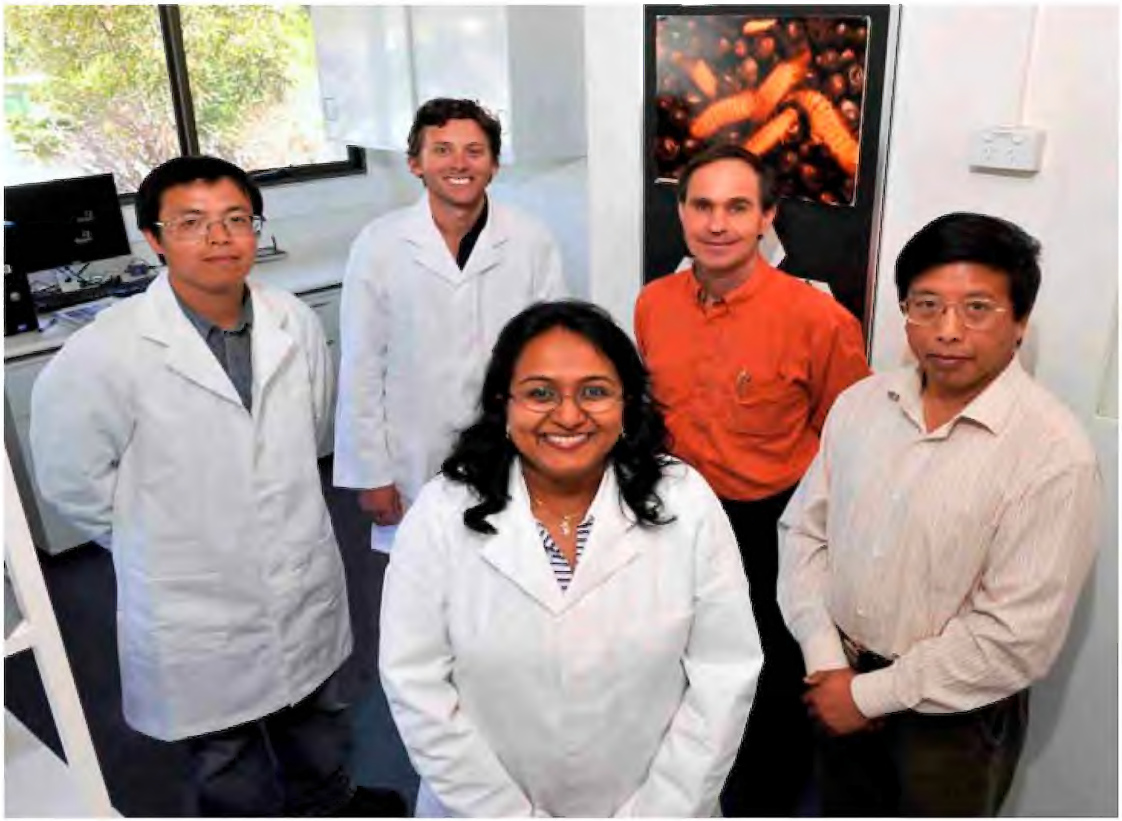
Jane ROYER, Anthony CLARKE
Queensland Regional Councillors

WESTERN AUSTRALIA

CSIRO Entomology - FLOREAT

Bruce Webber and **John Scott** are developing collaborative projects with Department of Environment and Conservation - DEC [http://www.dec.wa.gov.au] and South African National Biodiversity Institute – SANBI [http://www.sanbi.org] to study plant exchange between South West of Western Australia and the Cape region of South Africa. Bruce has also commenced field and glasshouse studies on a number of potentially invasive species here in South West of Western Australia, gave an invited presentation on climate change and weeds at the Kwongan Colloquium [http://www.plants.uwa.edu.au/alumni/kwongan], and has been appointed as an Adjunct Associate Professor at the University of Western Australia. **John** and **Bruce** continue to plan various climate change and weeds projects, including a possible project on stinking passionfruit (*Passifora foetida*) which is a threat to vine thickets and rainforest patches in the Kimberley region. Other projects being discussed include climate change and invasive nursery plants.

Owain Edwards and **Tom Walsh** have been important contributors to the pea aphid genome project, and the paper describing the pea aphid genome sequence is now in press in the journal PLoS Biology. In addition to the main paper, **Owain** and **Tom** are also involved in six companion papers spanning epigenetics,



Murdoch University Post Harvest Biosecurity Team (Back raw from left: Hui Cheng, James Newman, Giles Hardy, YongLin Ren (Team Leader). In the middle Manjree Agarwal (Photo: YongLin Ren)

ncRNAs, ion channels, and detoxification enzymes. Overall the genome project has been a great success and CSIRO at Floreat have been able to forge some excellent international relations with a number of groups around the world. For example, as part of a FAST (French-Australia Science and Technology) project, our collaborators at INRA, Rennes, visited in December to discuss the future of our collaboration on non-coding RNAs and DNA methylation in the pea aphid genome. Exchange trips are also planned with the Chinese Academy of Sciences, Institute of Zoology (IOZ), in Beijing and the Beijing Genomics Institute (BGI) in Shenzhen.

Raphael Didham, a Professor at the University of Canterbury in New Zealand, is joining the CSIRO team in Perth on a joint appointment with the School of Animal Biology at the University of Western Australia. Raphael's research will focus on invertebrate biodiversity in both natural and agricultural ecosystems.

Murdoch University – Post Harvest Biosecurity Laboratories

Murdoch University is at the forefront of the biosecurity battle, on 27th November 2009, opening a new laboratory focused on Post Harvest Biosecurity – Stored Grain Research laboratory. The team and infrastructure has been created with funds provided by the CRC for National Plant Biosecurity and the Department of Agriculture and Food Western Australia. Principal Scientist, Murdoch University's Associate Professor **YongLin Ren**, said this exciting initiative is timely as post harvest Biosecurity and security of stored grain becomes increasingly important around the world as the threat of food shortages escalates.

The Post Harvest Biosecurity Stored Grain Research Laboratory in Murdoch University will contribute to improved productive capacity and profitability of the Australian grain industry. It will also contribute to producing effective management options for Biosecurity risks and phosphine resistance in the food chain from growers to end users. It will develop new risk mitigation options that will contribute profitably to plant Biosecurity, food and trade safety and help maintain the Australian grain industry position as a market leader in domestic and international trade with sound, cost-effective and safe storage technology.

Grain growers and bulk handling companies are among the main beneficiaries. A benefit cost analysis showed stored grain research, eg., stored grain research into fumigation has allowed Australia to export to the world's markets and still meet the strict "nil insect tolerance" export requirements, showed a return of more than $20 for each dollar spent. This research has allowed Australia to export to the world's markets and meet the strict 'nil insect tolerance' required for export. Previous research has also provided storage management options for canola and other oilseeds with production significantly increasing in past 10 years. The return on investment in stored grain research will be more than two billion dollars in benefits by 2025. This was estimated to be $2.33 for every tonne of grain grown in Australia in the year 2000, rising to $2.47 per tonne in 2002 and to $4.03 in 2005.

After deregulation of the grain market, research and development centered on farm and central storage systems will play an important role in maintaining the reputation of Australian grain in domestic and international markets as well as maintaining profitability of the industry. Through research Australian grain is being kept in the forefront of a very competitive world market. It is vital for the survival of nation's grain growers to have a well managed and successful grain storage industry.

Functions and research strategy of the Post Harvest Biosecurity, Stored Grain Research Laboratory:

Biological studies of stored product insect pests and microorganisms

- Chemical ecology of insect pest
- Emergent pest and climatic influences
- Management of mould and mycotoxins
- Diagnostic technology for insect and microorganisms

Pest management

Fumigant chemistry/regulatory and fumigation technology
Phosphine resistance management
Non chemical methods
Quarantine treatment and eradication

Stored product management

Moisture management
Quality management
Analysis of chemical residues
Storage structural integrity

Education and social awareness

Online information for Australian grain storage, insect management and industry regulations for growers and the post harvest grain industry
Training for Australian and international grain storage and pest control operators, farmers and extension officers
Provide and conduct postgraduate research program
Provide undergraduate classes on plant Biosecurity and food security

Green carabid,* Calosoma schayeri, *collected in Port Denison in August 2009. (Photo: Pia Scanlon)

University of Western Australia - Centre for Forensic Science

Sasha Voss submitted her PhD titled 'Investigation of Hymenopteran Parasitoids of Forensic Importance: Indicators of Post-mortem Interval' for examination and is awaiting the results.

January has started off well with two overseas students who are doing their internship in Forensic Entomology; **Paola Magni** (University of Turin, Italy) completing her experimental work for her PhD and **Anya Jones** (University of Amsterdam, Holland) completing her Master. The university has made a grant of $3 million to relocate the Centre onto main campus in a purpose built facility. This will bring all the forensic groups at UWA under one roof, forensic Chemistry, DNA and Biology. The offices will be ready by end of January and all labs by April 2010.

Department of Agriculture and Food Western Australia (DAFWA)-South Perth

John Botha from Broadacre entomology at DAFWA reports that observations within a no-till trial (started in 2007) indicate that the lower cultivational inputs coincide with a gradual increase in the numbers and species of some predatory beetles. In 2009 larger species started to show up, including the green Carabid, *Calosoma schayeri*. These beetles may have flown in from surrounding areas and are mostly active at night, during which they hunt slow moving prey such as caterpillars. If handled they give off an unpleasant scent.

Modika Perera from DAFWA Biotechnology has taken up a new position as an Acting Manager, International Projects with *AGWEST* International for six months. *AGWEST* International is the overseas consulting arm of DAFWA. *AGWEST* International operates in partnership with government agencies and organisations in Africa, the Middle East and

Asia to provide project management, specialist technical and capacity building services and customised training packages.

AGWEST International draws upon expertise from within DAFWA as well as Western Australian universities, agribusiness, and other government agencies under collaborative arrangements. Modika is very excited with her new challenging position and look forward to work with *AGWEST* International team lead by Kellie-Jane Pritchard.

The entomology branch celebrated Christmas with a BBQ and a game of cricket on the South Perth foreshore. The level of activity varied; some batters were a bit too keen with many cricket balls ending up in the Swan River. Others were just content to have a drink.

Modika PERERA
WA Regional Councillor

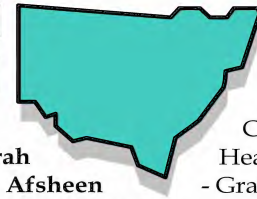
Bill Woods

Sonya Broughton in front of the 'stumps'

John Botha

Peter Mangano supervises Darryl Hardie

NEW SOUTH WALES



University of Sydney, Faculty of Agriculture, Food and Natural Resources

The entomology group (**Sarah Mansfield**, **Alan Clift** and **Afsheen Shamshad**) along with much of the Faculty has relocated off-campus to the Australian Technology Park. Demolition of the McMillan and Ross St buildings will commence this year followed by construction of a new building to house the entire faculty in future. Despite the disruption, **Annie Noack** and **Iona Symons** have completed their PhDs and will graduate in May along with **Jessica Smart** (BScAgr) and **Dominic Cross** (BHortSci). Jessica is now working as a consultant in South Australia, while Dominic intends to pursue a PhD later this year.

Industry & Investment NSW - Orange Agricultural Institute

The 14th annual Entomologists of Orange Christmas Lunch was held at Wentworth Golf Club, Orange, on 17 December with 13 attendees (see photo). They represented Orange Agricultural Institute, CSU Orange, Agrisearch Services, I & I NSW Head Office and retirees (well, just one retiree - Graham Thwaite).

With **Andrew Mitchell** moving from the department to the Australian Museum in February, the future of DNA barcoding work within I & I NSW is uncertain although we are hopeful that we will be able to replace Andrew to continue this valuable work. This has put some uncertainty into **Holger Löcker's** future employment at Orange. Holger was the link between Andrew's group at Wagga and the collections group at Orange. **Murray Fletcher** has received a departmental award recognising more than 30 years of employment with the department. It seems fascinating that, in the midst of downsizing and after several rounds of voluntary redundancy, the department still rewards those who remain for long periods. Murray also travelled to Wagga with **Geoff**

Entomologists of Orange Christmas Lunch on 17th December 2009.

CHAEC meeting attendees in Darwin, 24 September 2009.

Gurr in November for a workshop with representatives of funding agencies to demonstrate the breadth of scientific knowledge and research capability within the E.H. Graham Centre, a joint facility linking I & I NSW and Charles Sturt University. **Murray Fletcher** and **Peter Gillespie** also attended a departmental entomologists' meeting in Gosford, 26-27 November. Murray presented a session on the NSW Research Scientist scale and also made the after dinner presentation on Scientific Names. Sounds boring but it can be quite interesting if done the right way and the audience is suitably lubricated. Peter presented a half day training course on identification o
f fruit flies, particularly using his web key to fruit flies of southern Australia, to the local entomologists and presented a session to the meeting about the work of the Scientific Collections Unit.

Industry & Investment NSW - Yanco Agricultural Institute

Mark Stevens and **Glen Warren** are busy trapping *Rhyzopertha dominica* and *Tribolium castaneum* as part of a CRC NPB project on stored grain pest ecology. Interestingly, more *R. dominica* are being caught in remnant native vegetation than in traps adjacent to silos, suggesting that this species may be utilising a broader range of food sources than previously thought. Protocols are being developed for evaluating the seeds of native plants as alternative hosts, and funding for phase 2 of the project is now being sought from the CRC. The project involves collaboration with stored grain entomologists from a number of agencies, including **Greg Daglish** and **Andrew Ridley** from Queensland Primary Industries and Fisheries. **Kim Philpot** finished her contract on stored grain pest ecology in November, and following the retirement of **Richard Faulder** early in 2009, there are now a number of empty chairs around the Yanco labs.

Jianhua Mo and **Scott Munro** continue working on the management of thrips in onions and Fuller's rose weevil in citrus, however both these projects are concluding shortly and **Jianhua Mo** and **Mark Stevens** are now collaborating on several funding applications, including one looking at citrus gall wasp which is becoming an increasing problem in the Dareton area. **Mark Stevens** is also collaborating with **Andrea Wilson** and **Max Finlayson** at Charles Sturt University with a

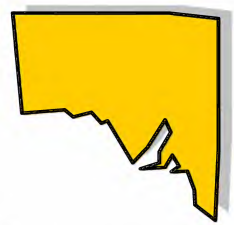
view to obtaining funds for projects on rice field ecology and wetland interactions in India. **Catherine Choung**, a PhD student supervised by **Mark Stevens**, **Ross Hyne** (DECCW, Lidcombe) and **Grant Hose** (Macquarie Uni) has finished her laboratory work on the ecotoxicology of atrazine and terbufos mixtures and is busily writing up for submission early in 2010.

Industry & Investment NSW - Elizabeth Macarthur Agricultural Institute

Olivia Reynolds, Research Scientist with the EH Graham Centre (a collaboration between Industry and Investment NSW & Charles Sturt University) has recently transferred from the I&I NSW Wagga Wagga Agricultural Institute and is now based in Sydney at the Elizabeth Macarthur Agricultural Institute. Olivia continues with her existing research projects on fruit fly management and silicon and induced plant defence and is looking to establish new collaborations and reaffirm existing ones now that she is located within closer proximity to many of her collaborators.

Murray FLETCHER/Sarah MANSFIELD
NSW Regional Councillors

SOUTH AUSTRALIA



University of Adelaide

In early December **Kate Muirhead**, a PhD student in Andy Austin's lab, submitted her thesis on the systematics of the *Cotesia flavipes* species complex of braconid wasps and co-evolution with their polydnaviruses (PDV). The day after submitting, Kate left to spend a week at the University of Illinois with **Jim Whitfield** in Champagn, who is a world leader in wasp-PDV evolution. Kate then met up with **Andy Austin** at the Entomological Collections Network meeting and Entomological Society of America Conference in Indianapolis, where Kate and Andy presented papers on their latest parasitoid research. Prior to the conference, Andy spent some time with **Norm Johnson** at Ohio State University in Columbus working on various aspects of their NSF-funded Planetary Biodiversity Inventory project on the systematics of platygastroid wasps, which comprises a large taxonomic component, as well as a molecular phylogeny of genera on a global basis. Andy has had a productive December with two other PhD students submitting their theses: **Tessa Bradford** has presented a thesis on modes of speciation in subterranean diving beetles from a single calcrete aquifer in central Western Australia, while **Renate Faast** completed a project on pollination and reproductive success of *Caladenia* orchids in the Adelaide Hills.

In mid November, **Gary Taylor**, **Lars Krogmann** (Stuttgart Museum) and **John Jennings** visited Kangaroo Island to collect insects on *Allocasuarina* as part of an ARC Linkage project on the 'Systematics and coevolution of insect herbivores on casuarinas'. Back from KI for just a couple of days, and after an eventful trip with flight delays and missed connections, **Lars Krogmann** and **John Jennings** spent 8 days collecting wasps from the southern half of New Caledonia. John also took the opportunity to collect insects on *Casuarina* and *Gymnostoma* for the ARC Linkage project and discovered an undescribed psyllid of a genus previously known only from Australia. They also visited **Hervé Jourdan** and the insect collection at the IRD (Institut de recherché pour le développment). A snap strike by baggage handlers in Noumea didn't help their return to Australia!

In November, **John Jennings** attended a meeting of TaxA (Taxonomy Australia) in Canberra.

Kerrie Davies was invited to Landcare Research, Auckland, New Zealand for a week where she worked with **Zeng Qi Zhao** to describe a new genus of anguinid nematodes, and gave a seminar on *Fergusobia* and *Schistonchus* nematodes. Kerrie was also able to catch up with entomologists **Nick Martin**, **Trevor Crosby** and **Quentin and Janine Paynter**. It was a great week, but gosh Auckland is a wet place!

SARDI Entomology

Who says exciting things don't happen in Adelaide?? The **SARDI Entomology Unit**

decided to have an alternative to the Melbourne Cup, with their "Run-a-bug" Cup. **Nancy Cunningham's** talented entrant earwig named "Ears to you" won The Run-a-bug Cup (a coffee cup full of deluxe chocolates).

Nancy Cunningham with her winnings

OVERSEAS NEWS

Papua New Guinea

Ramu Agri Industries

In late October 2009, **Anthony Rice (AQIS)** and **David Tenakanai (NAQIA)** visited with a team of weed scientists and plant pathologists to look for quarantine survey of the Ramu area. **Kaile Korowi** attended a Pacific Biocontrol Workshop in New Zealand in mid-November. **Peter Samson** visited with other BSES staff members in early December. Peter is assisting in setting up variety screening trials for the sugarcane borer, *Sesamia grisescens,* in sugarcane at Ramu, PNG. **Lastus Kuniata** visited the Solomon Islands to assist in training peanut farmers in best management practices. It was noted that coconuts on Malaita Island has serious Finschhafen disease and affected palms do not produce nuts.

PNG OPRA

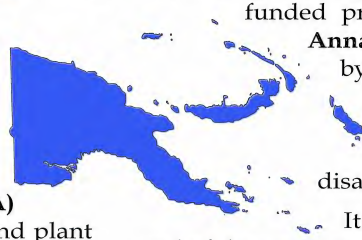
Charles Dewhurst is currently away on leave in the UK. One of the first tasks when he returns from leave is to bring over to Ramu the 'new' *Elaedobius* weevils recently introduced from Africa.

University of Natural Resource and Environment (Vudal)

Students from the University of Natural Resource and Environment (UNRE) formerly University of Vudal, learnt about mechanisms involved in the biological control of invasive weed species in PNG. This was made possible with the involvement of entomologists from the National Agricultural Research Institute's Island Regional Centre (IRC) and the National Agricultural Quarantine Inspection Authority. Entomologists spoke to second year students taking biological control as part of their crop management studies.

The seminar was organised by **Annette Mwayawa** (Lecturer in Crop Protection) in October 2009.

The aim was to allow resource personnel to present field experiences on principles of biological control and its agents. NARI entomologist and project scientist of a donor funded project on *Mikania micrantha*, **Anna Kawi**, talked on work done by the Institute, including released biological control agents with their advantages and disadvantages.



It was anticipated that at the end of the seminar, the students should:

appreciate the complex nature of interactions among host plants, pests and the biocontrol agents used against pests and weeds in agricultural ecosystems,

understand the history and principles of biological control,

understand the processes involved in Classical Biological control programme,

broaden their knowledge on past research by NARI and other research institutes on biological control of pests (weeds, insects, pathogens) with emphasis on the successes of gall fly on *Chromolaena* weed, and

appreciate how a pathogen is introduced to manage *Mikania micrantha* (mile-a-minute) weed with discussions on the

process involved in Classical Biological control programme.

Lastus KUNIATA
PNG Councillor

NEWS FROM AFFILIATED SOCIETIES

Entomological Society of Queensland

The December 14 2009, Notes & Exhibit meeting and Christmas BBQ was well attended. Geoff Thompson gave a short presentation detailing the forthcoming feature display of F.P. Dodd's (Butterfly Man of Kuranda) magnificent butterfly collection to open at Queensland Museum on 13th February, 2010. Geoff Monteith presented a pictorial show of the diversity of Insect Art on buildings and structures around Brisbane. Chris Lambkin & Noel Starick – reported on Biodiversity Blitz: WA, SW Qld & N. NSW showing photos of some of the notable collections made during the survey. Graham Donnelly gave an interesting presentation on observations of dragonfly exuviae on trees made at the margins of Lake Nuga Nuga near Arcadia Valley CQ.

The 17th BugCatch will be held at the Bunya Mountains National Park from Friday 26 – Sunday 28, February 2010. Many years ago the society presented two drawers of local insects collected by society members for display at the Bunya Mountains National Parks Information Office at Dandabah. We are collecting over the weekend to upgrade the display that has deteriorated over time as well as supply a list of insects seen and collected. Malaise traps, baited pitfall traps, sweep netting, beating, bark spraying, and hand searching will be used across 35 km of walking trails from Friday midday, and light sheets set up at dusk on Friday and Saturday nights at Burton's Well. Interested in joining us? Contact Chris for details at christine.lambkin@qm.qld.gov.au .

The 2010 General Meetings will be held the second Monday each month at 12pm in the conference Room, CSIRO Long Pocket, 120 Meiers Rd Indooroopilly and include:
Monday March 8 AGM & Presidential Address
Monday April 12 Dr Nancy Schellhorn (CSIRO)
Monday May 10 Dr. Martin Shivas (BCC – Mosquito Management Group)
Monday June 15 Notes & Exhibit
Monday August 16
Monday September 13
Monday October 11
Monday November 8
Monday December 13: Notes & Exhibit + 5pm meeting followed by Christmas BBQ
Visitors Welcome.
http://www.esq.org.au/
Noel STARICK

Entomological Society of Victoria

Meetings for the year have included a night devoted to beetles, other member's nights, a talk by Don Sands on the effect of fire reduction burning on invertebrates, and a visit to the CSIRO Ian Wark Forestry laboratory, hosted by Laurie Cookson.

Newsletter articles of importance are those announcing range extensions for *Hemiphlebia mirabilis* (Odonata) and *Synemon collecta* (Lepidoptera: Castniidae). Kelvyn Dunn provided a long review on his butterfly database. The Society's activities have become skewed towards the non-butterfly Lepidoptera so there are other moth reports - new specimens, corrigenda and range extensions. A new genus of Odonata (Selysioneura) is reported from Queensland.

Moths of Victoria Parts 1 and 2 are selling well and Parts 3 and 4 are well advanced with funds in hand to publish the next one and most of the other.

We have no difficulty in attracting a quorum when it is show and tell night but will we able to achieve one at the AGM when we should make some amendments to our constitution?

Because of storage problems, and no call on them for many years from members, the Society is disposing of its archives. Museum Victoria and members have taken quite a lot but they are now available to you for the cost of their postage. There are no complete runs and there is some evidence of Zygentoma lacework.

If you still believe in paper and have gaps in your collection, contact treasurer@entsocvic.org.au for a list; here is what awaits: J. Aust ent Soc. (6-10, 13-33); Lepidopterists News (9-12); J. Lep. Soc. (28,30); News of the Lep Soc. (1974-1993); Trans Roy Ent Soc (115-127); The Weta (7-13); Aust Ent Soc News Bulletin (7-11) and Myrmecia (25-35); Teen Int Ent Group (5-8); Aust Zool (13-16); Syst. Ent (1-2); J Ent Soc NSW (2-21); Ent Soc Qld News Bull (3-9); Victorian Entomologist (numerous)…

Ian ENDERSBY

THE POSTGRAD PATCH

Happy new year postgrads! May 2010 be full of smooth-sailing and many publications (!!) for you all. In the last Myrmecia, I discussed the issues one may experience with data collection during candidature. I decided this issue to write about the supervisor, not only because most tales of PhD woe I hear seem to relate to supervisor troubles, but also because your supervisor can make or break your PhD. It is worth doing some research before you agree to be supervised by such and such. Look at their publications, Google them, talk to prior students, and look at their student completion rate. If less than half of their students don't complete, find out why. When talking to postgrads, their supervisor's behaviour appeared quite varied, so I decided to categorise supervisors by said behaviour, and it's no wonder they cause so many problems for postgrads. Here they are:

1. The 'Crap Communicator' supervisor. This one does not get your work back within a reasonable time frame, leaving you hanging on, sometimes for months, or years, on end. This is just so common. Or, they have the habit of telling you there are major issues with your project four days out from your confirmation or exit seminar, or thesis due date...yeah, thanks for that. Message to supervisors - if you don't have time for your flock, then don't expand it! Message to scholar - warning bells should be ringing.
2. We have the 'Periodical' supervisor. This one pops out of the ether so rarely you get a major shock when it happens! When it does happen, it's usually to tell you something you probably already knew, or figured out six months ago.
3. The 'Selfish' supervisor. This one steals your work and publishes as sole author. This is just so low and such bad form. Sometimes, supervisors see their PhD scholars as cheap labour for their own research interests, and not worthy to share the author line. One of the main reasons people usually engage in a life-changing PhD is to learn. This selfish type of supervision prevents learning from happening. The scholar is usually too busy carrying out technical duties, being told what to do and when, except the actual job title 'PhD' means at least less than half the pay of a genuine technician. If the thieving is really bad, your university will have avenues for complaint (see last paragraph).
4. Ha-ha, the 'Crazy Editor' supervisor, who totally rewrites your work in their own words. If you genuinely need writing help, join a writing group. Otherwise, it's frustrating but if you can live with it, suck it up, get your PhD and get out of there. At least you are learning, right?
5. The 'Token' supervisor, who is only on the project for their name. So use it! Apply for more funding, and ensure their name is on the top of the list. Only problem is that they might not want to be involved past their name, which might be an issue when those draft manuscripts and chapters start flowing and need comment. But if you know they are token from the start, hey, what's the problem?
6. The 'Critical' supervisor can be such a confidence-buster. Your supervisor should be

constructive in their criticism, and if they aren't you have to let them know. They can also be extremely sarcastic with their comments, and sometimes you can just feel the repressed anger in them from the depth the pen marks make on your draft paper. I think severe criticism is unprofessional and likely uncalled for, and there are better ways to make a point to a thoroughly confused postgrad than being nasty. Maybe it's just their manner and nature to be mean and critical, but you can always say 'The way you just spoke/ commented makes me feel uncomfortable/ useless/ paranoid/ unhappy. I would really appreciate it if you could be more constructive in your feedback'….or something like that.

7. Finally, we have the 'Super' supervisor. I have one of these. A veritable font of knowledge and assistance.

Here are ten rules that have helped me and my cohort deal with our supervisors:

1. Be assertive, and stick up for what you believe in, or at least float your idea and be prepared to listen and learn when it's revealed the idea is actually daft.
2. Be independent, but know when to ask for help.
3. Prepare for meetings with your supervisor, have a list of questions and don't leave until you have clear direction. By now, my supervisor must be sick of the confused look on my face, accompanied by 'I still don't get it'. But I always leave knowing my next step.
4. Keep your relationship with your supervisor professional. Lab BBQ's are OK, invited to private candle-lit dinners for two are probably not.
5. Make sure you have a list of people with experience in your fields that you can turn to in times of need. You may figure out early on what your supervisor's strengths are, so be aware of them and use them to your advantage. Just also be aware of their weaknesses.
6. Ask lots of questions of your supervisor, and also write to authors of papers you like and ask their advice, talk to other students, just ask, ask, ask!
7. Can you all turn work around in a reasonable time frame? Agree on a standard time-frame – two weeks? - before jumping into your PhD.
8. On from 7. Sorry, but supervisors are busy too and sadly enough, their life does not revolve solely around you. If you have an urgent deadline, check with them first to ensure they can meet it. Sometimes they will need extra time to get back to you, so cut them a little slack sometimes!
9. Discuss authorship of publications, and what you expect your co-authors input to be, especially if you have lots of supervisors. General advice – don't burn any bridges by leaving someone off, if it's no skin off your nose to include them.
10. Don't take criticism personally – feedback should be about the 'project', not you or your ability. Have the confidence to say 'I don't know!' if someone asks you something tricky. It feels good, especially during supervisory meetings and at the confirmation seminar. Other things you can say are 'Good point, I hadn't thought of that. Do you mind if I email you about that later this week?'. You are not an expert (well, not yet) so how can you possibly know it all?

Where to? If you have problems with your supervisor, talk it out with them first so they are aware their behaviour is causing you angst. Maybe they can't stand you either? Best case scenario everyone agrees to move forward. If that doesn't help, and the issues are unresolvable, or your expectations are just too different, seek advice on your options from the Graduate School, Union, Head of School and other students. You may have to go to a mediation to work things out. You may also decide to dump the useless one and choose a much better supervisor, which in some cases might take six months or a year to figure out. In this case, your PhD will take longer, but in that long run, you will come out a much saner person. Don't stay with a crap supervisor out of a twisted sense of loyalty. Remember, it is your PhD to make the most of!

If you would like to share via the Postgrad Patch any stories or experiences that my assist in an enlightened passage for fellow students, please do. I can be contacted on kylie.anderson1@jcu.edu.au.

Kylie ANDERSON

NEW PUBLICATIONS

Identification Guide to the Australian Odonata

By Gunther Theischinger and Ian Endersby. Published by Department of Environment, Climate Change and Water, NSW. 2010. Pp. 283.

A new identification guide to Australian Odonata has just become available. The guide features keys to larvae and adults, distribution maps, and colour photos of some adults and larvae.

You can download the whole guide as an 8.7 MB pdf from http://www.environment.nsw.gov.au/resources/publications/09730AustOdonata.pdf

Some hard copies will be available at no charge to those who are not going to make a commercial gain. If interested, contact Gunther at Gunther.Theischinger@environment.nsw.gov.au.

ENTOMOLOGY IN THE NEWS

Club of five to offer the buzz on insects

20 January 2010, The Australian, written by Jill Rowbotham
www.theaustralian.com.au/higher-education/club-of-five-to-offer-the-buzz-on-insects/story-e6frgcjx-1225821384142

ENTOMOLOGY has languished in university curriculums in the past half dozen years, but five universities have come up with a way of providing essential training in the discipline.

Charles Sturt University and the universities of Queensland, Adelaide, New England and Western Australia have clubbed together in Entomology Curriculum Australia, a project funded by the Australian Learning and Teaching Council, to offer four specialist units to third-year students enrolled in science or similar degrees anywhere in the country.

"The ECA got off the ground in about 2004 at the University of Queensland, which historically has been one of the main providers of entomologists in Australian," said project leader and UQ entomology lecturer David Merritt.

The subjects insect physiology, integrated pest management, insect-plant interactions and insect identification will be available online in a distance education format.

"Structural changes at universities mean smaller courses are not always carried and entomology was one of these," Dr Merritt said.

This was because there was low demand. "Very few students enter university thinking they want to be entomologists."

Dr Merritt, who initially chose zoology, ultimately studied entomology because he realised that in an under-subscribed field he would have a better chance of building a career.

Since then, the supply has dwindled further.

"People in the industry were saying there would be a future shortage in entomologists in vital fields such as biosecurity and biodiversity," he said.

"The quarantine service in Australia asks if we have any honours students who can identify insects, for example."

He assembled a working group of entomologists from universities and industry to collaborate on the courses needed to ensure professional training was available nationwide. "They [potential students] are not going to get a lot of support from their home institutions, so we want to get our message out."

The curriculum includes mini-lectures that can be downloaded to MP3 players, as well as comprehensive websites where students can view interviews with experts and complete the learning activities required.

Dr Merritt and the ECA are hoping students will form online discussion groups to collaboratively tackle research projects.

The four subjects will also be available as a means of professional development for science teachers and people working in insect-related fields.

Let internet replace journals

25 November 2009, The Australian, written by Oliver Marc Hartwich.
http://www.theaustralian.com.au/higher-education/opinion-analysis/let-internet-replace-journals/story-e6frgcko-1225803425489

The Australian Journal of Entomology was recently cited in an opinion piece in The Australian. Written by Oliver Marc Hartwich, a research fellow at the Centre for Independent Studies, the article questions the value and cost of academic publishing in the current internet age and refers to several journals including AJE. Hartwich is in favour of 'open access' publication. Essentially, he argues that research funded by tax-payers should be freely accessible to the community, rather than via subscription or access fees. 'The practice of academic publishing adds no value to Australian academics wishing to be heard. But it costs Australian libraries millions of dollars in subscriptions and it charges Australian taxpayers to access research that they funded in the first place.'

Economist Ross Williams and Editor of Australian Economic Review, which was the focus of the article by Hartwich, responded that academic publishing makes an essential contribution to the scholarly research community in Australia: 'The Melbourne Institute is dependent on outside funds and without income earned from worldwide distribution by Wiley-Blackwell, the journal would cease to exist.' (http://www.theaustralian.com.au/higher-education/letters/why-publish/story-e6frgcox-1225805921011).

A storm in a teacup? However, the issue is unlikely to go away as other countries, such as the USA, are moving to force some publically funded research to be made available within 12 months of completion. These requirements are usually placed on research involving public health, and in many cases grants from these bodies include funding for publication costs.

Rose Williams, the Journal Publishing Manager for AJE at Wiley-Blackwell, notes that while entomology research is funded, the costs of publication – running editorial offices and peer-review software, copy-editing, typesetting, online hosting and marketing – generally are not funded within research grants.

Nevertheless, AJE does offer authors the option of paying to make their articles open access –through the service known as 'Online Open'. Given that Australian funding bodies do not currently impose open access requirements on grants, nor provide funds to support publication, we do not expect significant take-up of this option amongst AJE authors at this time.

There are other benefits of journal publishing that Hartwitch does not address. Rose Williams notes that 'The role of the journal as a filter for credible information is even more relevant in the online world than in the past. A key benefit for Society journals in partnering with a professional publisher is the economies of scale they can bring in developing online content platforms that are robust and highly functional, in ensuring that content is widely accessible, and crucially, in developing ways to ensure research output can be found easily by busy researchers.'

Hartwich also errs when he argues that 'Students in Poland, Canada or Chile probably don't find ….the Australian Journal of Entomology in their libraries'. In fact, current content of AJE is available online to more than 3,000 libraries worldwide, including the countries above.

And of course, publishers also return income to Societies such as our society which enables them to continue to contribute to a healthy and vibrant scholarly community.

Sonya BROUGHTON

Reply to Hartwich's article in the Australian

http://www.theaustralian.com.au/higher-education/letters/why-publish/story-e6frgcox-1225805921011

Denis Anderson inspects a hive in Papua New Guinea. (Photo: D. Anderson)

Honeybee Blues

1 December 2009
SBS, Screen Australia
http://www.screenaustralia.gov.au/showcases/honeybeeblues/

Not all Australian ferals insects are regarded to be destructive. Feral Western honeybees (Apis mellifera), provide a free community service by pollinating approximately 70% of Australian food crops. This is a level of free pollination that is unique in global terms. First introduced in the 1820s, *Apis mellifera* has also benefited from the relationship. The widespread availability of nectar sources from Australian native plants has allowed the honeybees to proliferate throughout the country. But there is no such thing as a free lunch: parasitic 'vampire' mites threaten the service.

Honeybee Blues shown on television station SBS on December 1st 2009, the documentary shows how *Varroa* mites have severely impacted on the world's honeybees. *Varroa* feed on the haemolymph of the developing honey bee brood and the adult bees, and can also transmit lethal viruses. In severely attacked colonies, bees may have stunted wings, missing legs or other deformities. Denis Anderson (CSIRO) discovered and described *Varroa destructor*, and is featured in the documentary.

Varroa and Colony collapse disorder

First reported in 2006, colony collapse disorder (CCD) occurs when worker bees abandon their hives. The colony then dies out. A range of factors are believed to play a role in CCD including viruses, fungi and pesticides. Stress such as infection by the *Varroa* mite, poor nutrition, and transportation of hives long distances may also contribute to CCD. Australian honey bees for example, are exported to the USA for crop pollination.

Host switching

Varroa destructor was previously a pest of the Asian honeybee, *A. cerana*, but switched hosts to *A. mellifera* somewhere near the Korea Peninsula sometime in the 1940s. It is this strain that has been slowly spreading throughout the world. *V. jacobsoni* is widespread in *A. cerana* in the Pacific and South East Asia. Previously, *V. jacobsoni* caused less concern to Australia than *V. destructor*, which is established in New Zealand. In 2008 however, a newly evolved strain of *V. jacobsoni* was found reproducing on *A. mellifera* in New Guinea. Anderson is filmed speaking to distraught beekeepers in Papua New Guinea whose hives were decimated by the mutating *V. jacobsoni* (see photos).

Australia - the only country free of Varroa

Australia is now the only agricultural area in the world free of *Varroa*. And when it gets in, *Varroa* has never been eradicated from a country, so once it gets in; it will be here to stay. Though *Varroa* can be managed by beekeepers if they have sufficient expertise and resources, experience around the world shows that feral *Apis mellifera* populations are dramatically reduced when *Varroa* invades.

Hope on the horizon?

Denis Anderson believes the solution to eradicating the *Varroa* mite lies in switching off the honeybee gene that tells the mite to reproduce.

A copy of the program is available from Film Australia for $34.50.

Sonya BROUGHTON

Apis mellifera with a Varroa destructor mite on it's thorax. (Photo: Stephen Ausmus, USDA)

INTERESTING WEB-SITES

Australian Entomological Society

Make sure you bookmark this one. The Australian Entomological Society has a new web-site. To check it out, follow the link: http://www.austentsoc.org.au.

And in keeping with the times, the society also has a presence on Facebook. There were 24 members when last checked. You can chat with other entomologists and find job posts or scholarships.

NOBANIS

The North European and Baltic Network on Invasive Alien Species (NOBANIS) provides an umbrella structure for cooperation between 17 nations in the region and has developed a network of common databases on alien and invasive species including those considered currently invasive, as well as species that may become invasive.

One NOBANIS goal involves establishing administrative tools for preventing unintentional dispersal of invasive alien species. The alien species database can be searched by nomenclature, habitat, group, country, or by multiple factors. The NOBANIS website www.nobanis.org includes nearly 60 invasive species fact sheets, most with full colour photos. http://www.nobanis.org/

COMING EVENTS 2010: Australia

ANNUAL MEETING OF THE AUSTRALASIAN SOCIETY FOR THE STUDY OF ANIMAL BEHAVIOUR

6 - 10 April 2010
Narrabri, NSW

The Annual Meeting of the Australasian Society for the Study of Animal Behaviour will be hosted by Dr Mary Whitehouse (CSIRO Entomology) and team at the Australian Cotton Research Institute in Narrabri, NSW. For further details, visit the web-site.

http://assab2010.eriophora.com.au/index.html

AUSTRALIAN ENTOMOLOGICAL SOCIETY'S 41st AGM & SCIENTIFIC CONFERENCE

Entomology for Australia's Future
September 26-30 2010
Perth, WA

The Organizing Committee, Sonya Broughton, Modika Perera, Maria José de Sousa Majer and Jonathan Majer invite you to the 41st AGM and Scientific Conference, which will take place at the Vines Resort in the Swan Valley, just north of Perth.

Our conference logo is the Western False Saturn Moth or Dryandra Moth Carthaeidae, *Carthaea saturnioides*. Feeding on Grevillea and Banksia species, the moth's activity season is August to December, so you may have a chance to see it in its native range.

The conference will have five themes:

* *Invasive species and biosecurity*
* *Threats to biodiversity and their amelioration*
* *Food safety*
* *Insect biology and ecology*
* *Systematics and taxonomy*

There will also be a half-day mid-conference tour of the Swan Valley. This relaxed region is where you'll find rolling vines, meandering waterways and lush natural bushland, as well as award winning wineries, breweries and food producers. As Western Australia's oldest wine growing region, many vineyards are still owned by descendants of European emigrants. Many wineries offer cellar door tastings, or if you're partial to a pint, there are four microbreweries offering award winning drops.

We look forward to seeing you over here in the West.

www.aes2010.org/

GLOBAL BIOSECURITY 2010: SAFEGUARDING AGRICULTURE AND THE ENVIRONMENT

28 February - 3 March 2010
Brisbane, QLD

Details of the preliminary program are now available on the web-site. Registration is also now open.
http://www.globalbiosecurity2010.com/

12TH IUPAC INTERNATIONAL CONGRESS OF PESTICIDE CHEMISTRY

Chemistry for a Sustainable World
4th - 8th July 2010
Melbourne, VIC

Scientific Topics for Environmental Fate and Safety Theme

- Risk Assessment and Risk Mitigation to protect environmental quality and human health
- Pesticide use to control invasive species and to protect endangered species
- Climate change and GMO crop effects on pesticide use and risk scenarios

• Advances in simulation of pesticide fate and transport
• Degradation, transformation, and sorption processes in air, water, soil and biota
• Advances in environmental sampling methods and analysis technologies
• Ecological effects testing for tropical regions
• Risk assessment tools for developing countries
• Advances in pest management technologies – updates and environmental impacts

For further information:
www.iupacicpc2010.org
Email: iupac@asnevents.net.au

ECOLOGICAL SOCIETY OF AUSTRALIA SYMPOSIUM (& AGM)

4 December 2010
Canberra, ACT
'The Worlds of Ecology & Environmental Policy – Never the Two Shall Meet? Using bushfire as a case study'
More details to follow.

COMING EVENTS: OVERSEAS 2010

NZ ENTOMOLOGICAL SOCIETY 59TH ANNUAL CONFERENCE

11th - 14th April 2010
Victoria University of Wellington, NEW ZEALAND

The conference will be held at the Victoria University of Wellington's Pipitea Campus from the 11th to the 14th of April, 2010. This year's theme is 'Global entomology in New Zealand'. Submissions are called for symposia on the topics of:

1. Pest control, biocontrol & IPM.
2. Spiders, ticks, mites & shells.
3. Entomological heritage.
4. Biosecurity & global change.
5. Restoration, conservation & urban entomology.

Please note that there will be space available for "other" talks, if your work does not fall with these symposia topics. Presenters can choose from either 10 minute or 20 minute talks.

There will be field trips to Te Papa Insect Collection, and Matiu/Somes Island on Sunday, April 11th. The symposia will be held from April 12th to 14th April.
www.ento.org.nz/meetings.htm

62nd INTERNATIONAL SYMPOSIUM ON CROP PROTECTION

18 May 2010
Ghent University
Ghent, BELGIUM
Fax: 32-0-9-264.6249.
Phone: 32-0-9-264-6009.
www.iscp.ugent.be

IOBC WORKSHOP ON LANDSCAPE MANAGEMENT FOR FUNCTIONAL BIODIVERSITY

29 June -01 July 2010
Cambridge, UK
For further information contact J. Holland, Game & Wildlife Conservation Trust, Fordingbridge, Hampshire SP6 1EF, UK.
Email: JHolland@gwct.org.uk.
Fax: 44-1425-651026.
Voice: 44-1425-651035.
www.iobc-wprs.org/events/index.html.

10th INTERNATIONAL COLLOQUIUM ON INVERTEBRATE PATHOLOGY AND MICROBIAL CONTROL and 43rd ANNUAL MEETING, SOCIETY FOR INVERTEBRATE PATHOLOGY

11-15 July 2010
Trabzon, TURKEY
Now calling for abstracts. The scientific program includes invertebrate pathology, including biological control of insect pests, understanding disease in beneficial invertebrates, medical and biotechnological significance of entomopathogens and fundamental scientific research in host-pathogen interactions. Now calling for abstracts.
www.sip2010.org.

17th AUSTRALASIAN WEEDS CONFERENCE

Christchurch, New Zealand
26 - 30 September 2010
www.17awc.org/index.php

IOBC/WRS Working Group INTEGRATED PROTECTION OF FRUIT CROPS

12-17 September 2010
Tremiti Islands, ITALY

Info: C. Ioriatti, Istituto Agrario San Michele all'Adige, Plant Protection Dept., Via Edmondo Mach, 2, I-38010 S. Michele all'Adige (TN), ITALY.
Fax: 39-0461-615 500.
Phone: 39-0461-615 514.
Email: Claudio.Ioriatti@iasma.it

8TH INTERNATIONAL SYMPOSIUM ON FRUIT FLIES OF ECONOMIC IMPORTANCE

12-17 September 2010
Valencia, SPAIN

The purpose of the Symposium is to bring together academic, industry, research and action people from the all over the world to discuss the various aspects of fruit flies and recent developments related to Pest Management Strategies. The meeting will encourage cooperation between participants, contribute to spread new findings, promote their practical use and highlight research needs.
www.fruitflyvalencia2010.org

BIOLOGICAL CONTROL FOR NATURE CONFERENCE

Biological control of pests in forests and associated habitats
Northampton, Massachusetts, USA
3-7 October 2010

This meeting explores the benefits of classical biological control for the control of invasive insects and plants in natural forests, and associated habitats such as wetlands, grasslands, and deserts. Applications to islands and other natural systems will also be included. The meeting will not address other forms of biological control (e.g., augmentation, conservation, biopesticides), nor will it address use of biological control in plantation forestry. The meeting will appeal to biological control scientists, conservationists, invasion biologists, and land managers.

Email: MHoddle@ucr.edu.
Phone: 1-951-827-4714.
www.biocontrolfornature.ucr.edu. 8th

ENTOMOLOGICAL SOCIETIES OF CANADA AND BRITISH COLUMBIA JOINT ANNUAL MEETING

31 October - 3 November 2010
Vancouver, BC, CANADA

The 2010 JAM will take place at the Coast Plaza Hotel in Vancouver. The meeting theme will be "Communication". No further details available at present.
www.sfu.ca/biology/esbc/meetings.html

ENTOMOLOGICAL SOCIETY OF AMERICA ANNUAL MEETING

12-25 December 2010
San Diego, CALIFORNIA, USA

The ESA is holding it's 58th Annual Meeting in San Diego, California. The theme of the meeting is Entodiversity: Disciplinary, Biological, Geographical.
www.entsoc.org/am/cm/index.htm

2011

SOC. FOR ECOLOGICAL RESTORATION INT. WORLD CONF. ON ECOLOGICAL RESTORATION

August 21-25 2011
Yucatán, MEXICO
www.ser2011.org/en/

NOTICES

CALL FOR NOMINATIONS FOR THE MACKERRAS MEDAL

The executive invites nominations of Society members for the award of the Ian Mackerras Medal, in 2010. The Mackerras Medal is the Society's highest award and is given every two years to a member of the Society under 50 years of age who has demonstrated excellence in entomology.

The medal is named in honour of Dr Ian Mackerras, the Society's first President and an entomologist who embodied the excellence in entomological pursuits that the award recognises.

Those wishing to nominate a member for the award should bear in mind that:

a) Only financial members of the Society who will be under the age of fifty (50) years at the date of the award shall be eligible for nomination.

b) A candidate must be nominated by not fewer than two (2) financial members of the Society. Proposers of the candidate shall, not less than three (3) months prior to the Annual General Meeting, provide the Secretary with the candidate's name, date of birth, academic distinctions, relevant appointments and membership of societies, a list of the candidate's more important publications, and a statement of not more than 500 words explaining why the candidate merits the award.

c) A Selection Committee for award of the Medal will be appointed and convened by the President, and members of that Committee shall themselves not be eligible for nomination, nor may they be signatories to a nomination.

d) Should the Committee recommend to the Executive that an award be made the name of the recipient will be announced and the Medal presented during the week of the 41st Annual General Meeting in September 2010.

e) The Executive may make the award, Australian Entomological Society Service Award, to any member or former member of the Society in recognition of outstanding service to the Society."

Some previous recipients of the Mackerras Medal are:

1990 Dr R.A.I. Drew
1992 Dr E.S. Nielsen
1994 not awarded
1996 Dr M.P. Zalucki
1998 not awarded
2000 Dr P.G. Allsopp
2002 Dr G.P. Fitt
2004 Prof. A. Hoffmann
2006 not awarded
2008 Dr David Yeates

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entomology Curriculum Australia

Update on the ECA

The newly developed online, remote-delivery subjects of Entomology Curriculum Australia are ready to be offered THIS YEAR! The subjects are available to be taken as part of an undergraduate degree e.g. Bachelor of Science, or as independent subjects for Professional Development. An advantage of the ECA subjects is that they can be taken from *anywhere in Australia*. Students are able to enrol cross-institutionally for the subjects not offered at their institution, allowing them to be enrolled at any university and still get access to high-quality entomology education.

The subjects available in 2010 are:

Semester 1
Insect Structure, Function and Physiology
Semester 2
Insect-Plant Interactions
Integrated Pest Management
Summer Semester
Insect Identification and Taxonomy

For more information on these subjects and how to enrol visit www.entomology.edu.au

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Dr G.H.S. Hooper
Dr F.J.D. McDonald
Dr G.B. Monteith
Dr C.N. Smithers
Mr M. Upton

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1984 Dr J.A.L. Watson
1986 Dr R.W. Sutherst
1988 Dr T.R. New
1990 Dr R.A.I. Drew
1992 Dr E.S. Nielsen
1996 Dr M.P. Zalucki
2000 Dr P.G. Allsopp
2002 Dr G.P. Fitt
2004 Prof. A. Hoffman
2008 Dr D.K. Yeates

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Her Excellency,
Ms Quentin Bryce AC,
Governor-General of the Commonwealth of Australia

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Bugs for Bugs

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